PHANINDRA BADDULA

Solution Architect

Enterprise Architecture • AI-Driven Solutions • Azure Cloud Platforms

Singapore | +65 8490 8328 | phanindra208@gmail.com | LinkedIn | Medium | phanindra.org

PROFESSIONAL SUMMARY

Results-driven Solution Architect with 13+ years of experience designing and delivering enterprise-grade platforms across education, banking, government, and e-commerce sectors. Currently leading enterprise architecture and AI-driven solutions at the International Baccalaureate (IB) as Solution Architect across multiple projects and platforms, championing AI-first engineering, agentic architecture, and GitHub Copilot governance for a 100+ developer organisation. Deep expertise in Azure cloud architecture, .NET ecosystem, and modern frontend frameworks. Recognised for translating emerging technologies into production systems, building high-performing teams across geographies, and bridging the gap between engineering, enterprise architecture, and C-level stakeholders.

CAREER HIGHLIGHTS

- ✔ Leading enterprise architecture & AI-driven solutions across multiple IB projects
- ✔ Architected IB Assist chatbot (Copilot Studio + MCP + Oracle Fusion)
- ✔ Open-sourced universal-context-mode (90–99% token compression)
- ✔ Designed Trust Bank's insurance product end-to-end
- ✔ Built ArchMind – AI agent for auto-generating Azure architecture
- ✔ AWS + Azure dual-certified Solutions Architect
- ✔ Led AI governance & Copilot adoption for 100+ developers
- ✔ Multiple Star Performer awards at IB and Astoria

TECHNICAL EXPERTISE

Cloud & Infra	Azure (AI Foundry, Container Apps, APIM, Service Bus, Durable Functions, DevOps, Functions), AWS (EC2, Lambda, S3, ECS, CloudFront), Docker, Kubernetes, Terraform
Backend	.NET 8 / C# / ASP.NET Core / Web API, EF Core (Code First, Temporal Tables), MediatR CQRS, Golang, Node.js, Python
Frontend	Angular 17+, React, HTML5, CSS3, Tailwind CSS, TypeScript
AI & Agentic	Azure AI Foundry, Microsoft Copilot Studio, Semantic Kernel, AutoGen, GitHub Copilot Business, MCP Servers, OpenAI API, LangChain, Claude Code
Data & Analytics	Microsoft Fabric, SQL Server, PostgreSQL, Cosmos DB, MongoDB, Redis, Power BI, DocumentDB
Integration	Oracle Fusion Cloud (HCM, Procurement, BIP/SOAP), PingFederate (M2M Auth), APIM, REST, GraphQL, Polly Retry Patterns
DevOps & Tools	Azure Pipelines (YAML), GitHub Actions, Azure DevOps (Boards, Wiki, Repos), ADO Wiki + Mermaid, Terraform
Architecture	Microservices, Clean Architecture, Event-Driven, Domain-Driven Design, CQRS, TOGAF, API-First Design
Methodologies	Agile / Scrum (CSM), Architecture Review Boards, SDLC Governance, Technical Design Documents

CERTIFICATIONS

Amazon Web Services (AWS)

- AWS Certified Solutions Architect – Professional
- AWS Certified Solutions Architect – Associate

Microsoft Azure

- Microsoft Certified: Azure Solutions Architect Expert (AZ-305)

- Microsoft Certified: Azure Administrator Associate (AZ-104)

Agile & Governance

- Scrum Alliance Certified Scrum Master (CSM)

PROFESSIONAL EXPERIENCE

International Baccalaureate (IB) – Singapore *2023 – Present*

Solution Architect – Enterprise Architecture & AI-Driven Solutions

The International Baccalaureate serves millions of students across 160+ countries. Reporting to the Head of Enterprise Architecture, operating as Solution Architect across multiple IB projects and platforms – including the Assessment Platform, API Monetisation, Digital Credentials, IB Assist, and enterprise integrations. Primary focus on leading enterprise architecture and AI-driven solutions, alongside innovation, R&D, and technology strategy, championing AI-first engineering and agentic architecture adoption across a 100+ developer organisation.

- **Innovation & R&D Leadership:** Served as the primary innovation driver across IB's technology organisation, evaluating emerging technologies (Azure AI Foundry, MCP, Copilot Studio, Semantic Kernel, AutoGen) and translating them into production-ready solutions. Led internal R&D initiatives resulting in multiple AI agent concepts, developer tooling innovations, and architecture automation tools that were presented to and endorsed by the CIO and enterprise architecture board.
- **AI Governance & Developer Enablement:** Spearheaded AI-first development strategy for 100+ developers, establishing golden prompt libraries and MCP server infrastructure for GitHub Copilot Business and Claude Code. Created the Software Engineer Agent concept – an ADO Git-hosted MCP prompt repository that standardises AI-assisted coding practices, reducing code review rework by ensuring consistent patterns across all teams.
- **IB Assist Chatbot:** Architected and delivered a Microsoft Copilot Studio agent deployed in Microsoft Teams, enabling employees to query Oracle Fusion Cloud (HCM/Leaves and Procurement modules) via a custom MCP server hosted on Azure Container Apps behind APIM. Integrated SharePoint as a knowledge base and implemented PingFederate M2M authentication with Polly retry patterns. Resolved Oracle Fusion REST API scoping limitations through a hybrid BIP/SOAP approach for purchase requisition queries.
- **ArchMind:** Designed and built an Azure AI Foundry-powered autonomous agent that generates Azure architecture diagrams with official Microsoft icons and produces standardised solution documents, accelerating architecture review cycles.
- **universal-context-mode (Open Source):** Developed and published an MCP server achieving 90–99% token compression across major AI IDEs (Cursor, GitHub Copilot, Claude Code, Windsurf, Eclipse). Gained significant LinkedIn community traction and developer adoption.
- **API Monetisation Platform:** Designed the architecture for IB's API monetisation initiative, incorporating Microsoft Fabric for data integration, APIM gateway policies, and data mesh patterns to enable third-party consumption of IB assessment data.
- **Platform Engineering:** Built Clean Architecture reference implementations in .NET 8 with MediatR CQRS, EF Core temporal tables, and NUnit test suites to establish engineering standards and prevent technical debt from POC migrations. Managed EF Core Code First migrations in Azure Pipelines for automated database schema evolution.
- **Digital Credentials & Integrations:** Authored technical design documents for a digital credentials issuance system (React + .NET 8 + Azure Service Bus + DC Gateway) and Azure Durable Functions fan-out/fan-in patterns for automated Cvent-to-Oracle daily reporting workflows.
- **Stakeholder Communication:** Regularly presented AI initiatives to senior leadership (CIO and enterprise architecture board). Drafted Microsoft architectural review requests and coordinated cross-functional announcements crediting engineering, security, and architecture teams.
- **Hiring & Team Building – India Expansion:** Played a key role in establishing IB's new engineering branch in India, leading the hiring process for technical talent across .NET, Angular, and Azure skill sets. Defined role profiles, conducted technical interviews, and evaluated candidates for solution architecture, senior development, and DevOps positions. Contributed to onboarding frameworks and knowledge-transfer programmes to ramp new India-based teams to production readiness, ensuring alignment with IB's global engineering standards, AI governance practices, and SDLC processes.
- **Awards & Recognition:** Received multiple Star Performer awards at IB for outstanding contributions to AI-driven platform modernisation, engineering excellence, and cross-team collaboration. Consistently recognised by senior leadership for delivering high-impact initiatives ahead of schedule and championing innovation across the organisation.

PaloIT – Singapore *Mar 2022 – 2023*

Senior Consultant – Solution Architecture

Deployed as enterprise/solution architect to high-profile government and fintech client engagements.

▸ **GovTech – Machine Translation Portal (Mar 2023 – Dec 2023)**

Tech: *.NET, Angular, Azure Web Apps, Azure Pipelines, Azure DevOps*

- Led application architecture for a government web portal enabling localised translations with continuous MT engine retraining from user-contributed post-edits.
- Served as a key member of the Architecture Review Board, contributing to technology selection, system design approvals, and security audit processes.
- Collaborated closely with product owners, delivery leads, and DevOps teams to align architecture decisions with sprint delivery cadence.
- Ensured compliance with government information security standards and conducted regular security assessments.

▸ **Trust Bank – Singapore's First Digital-Native Bank (Mar 2022 – Mar 2023)**

Tech: *Microservices, APIs, Cloud-Native, Kubernetes, DevOps*

- Designed the insurance product architecture end-to-end, transforming business requirements into implementable microservices and API blueprints.
- Decomposed monolithic applications into a cloud-native microservices topology suitable for a DevOps-first operating model.
- Partnered with product owners, C-level executives, and external system integrators to define solution strategy, release roadmaps, and MVP scoping.
- Provided technology perspective for business prioritisation, simplifying complex problem domains and sizing technical effort.

I.AM+ – Singapore *Jul 2020 – Mar 2022*

Architect / Technical Lead

▸ **Omega Super App**

Tech: *Golang, .NET, Swagger, Microservices, Kubernetes, Docker, MongoDB, Spinnaker, Kibana*

A voice-first super app on iOS/Android combining email, calendar, movie/hotel/flight bookings, and payments. Partners: AirAsia, MAF, Expedia, Eateasy, Uber.

- Designed and implemented APIs, microservices, and all new platform features on the Omega backend, ensuring high reliability and scalability.
- Integrated 15+ third-party partner APIs and merchant payment gateways into the platform, managing authentication flows and error handling.
- Took architectural and design decisions building toward an efficient distributed microservice architecture with Kubernetes orchestration.
- Established enterprise architecture governance, aligning technology choices with business growth objectives.
- Worked collaboratively with technical peers and appointed vendors on solution strategy, providing oversight of technical delivery and inter-system dependencies.

Changi Travel Services – Singapore *Mar 2020 – Jun 2020*

Solution Architect

▸ **E-Commerce Travel Recommendation Platform**

Tech: *ASP.NET MVC, Web API, Cosmos DB, SQL Server, Azure Pipelines, Azure Web Apps*

- Responsible for establishing Enterprise Architecture and driving the cloud vision for a curated travel deals platform serving travellers with vetted merchant partnerships.
- Formed and organised the IT Architectural Review Board within the IT Project Management Office.
- Drove implementation of hybrid API management and data analytics platforms.
- Provided technical oversight across all IT Master Plan projects, assessing change impact on cross-system dependencies.

Astoria Solutions – Singapore *Sep 2013 – Feb 2020*

Software Engineer → Senior Engineer → Technical Lead → Solution Architect

Progressed through four roles over 6.5 years in a product company building IoT, construction-tech, and video analytics solutions. Recognised by CEO as Star Performer for consistent ahead-of-schedule, high-quality deliveries.

Solution Architect (Apr 2018 – Feb 2020)

- Designed end-to-end systems meeting complex customer requirements across construction, oil & gas, and shipbuilding sectors.
- Migrated existing products to enterprise-level platforms using modern cloud-native technologies.
- Evaluated and implemented new technologies; led R&D initiatives within the organisation.
- Managed hardware abstraction layer and video analytics pipelines for real-time processing.

Technical Lead (Sep 2016 – Apr 2018)

- Led and mentored a cross-functional team of 8 (developers + QA), providing strategic vision and technical direction.
- Introduced process improvements and enforced best practices for coding, architecture, and security across all products.
- Managed the CI/CD pipeline, ensuring smooth delivery of software products through QA to production.

Senior Software Engineer / Software Engineer (Sep 2013 – Oct 2016)

- Developed innovative features using comprehensive knowledge of competitors' products and market needs.
- Contributed key product design ideas that improved customer acquisition and user experience.

Key Projects at Astoria:

▸ **Material Management & Tracking**

Tech: *Angular, Web API, Microservices, Kubernetes, Docker, Cosmos DB, SQL Server, .NET Core*

- Full lifecycle tracking of precast, rebar, and PPVC materials from production through installation. Integrated with BIM (3D modelling) for enhanced productivity in the construction industry.

▸ **Video Analytics – Worker Safety**

Tech: *OpenCV, Azure Cognitive Services, Azure SignalR, Cosmos DB, IoT Hub, .NET Core*

- Real-time worker safety validation system using CC camera live feeds processed through Azure Cognitive Services for computer vision-based compliance monitoring.

▸ **Worker Safety & Accountability Platform**

Tech: *Azure, ASP.NET, Xamarin, C++, Web API, Power BI, RFID/Bluetooth Sensors*

- RFID and Bluetooth sensor-to-cloud solution for real-time worker location tracking, confined-space occupancy monitoring, and automated safety breach alerting across oil & gas, construction, and production sites.

▸ **Smart Lift Monitoring**

Tech: *Angular, Power BI, SignalR, Azure Web Apps, RFID*

- RFID-based lift usage tracking in construction sites, providing data-driven insights into usage patterns and operational efficiency through Power BI dashboards.

▸ **Worker Time Management**

Tech: *ASP.NET, SQL Server, WCF, Xamarin*

- Workforce attendance tracking with flexible policy engine for automated payslip generation, integrated with RFID and biometric systems.

Giftech Software Solutions – India *Jun 2012 – Oct 2013*

Associate Software Engineer

▸ **Helpdesk Support – ASDA Group Limited**

Tech: *C#, SQL Server, Socket Programming, MVC*

- Developed a live chat and monitoring system with floating inline chat, admin control levels, social media integration, and a real-time statistics dashboard.
- Built internal communication platform supporting large file/image/video transfers using socket programming, serving as a bridge between customers and operators.

EDUCATION

Bachelor of Technology – Electrical & Electronics Engineering 2012

Gudlavalleru Engineering College, Andhra Pradesh, India

OPEN SOURCE & PUBLICATIONS

- **universal-context-mode (GitHub):** Open-source MCP server enabling 90–99% token compression across all major AI IDEs. Actively maintained with growing community adoption.
- **Medium Blog (medium.com/@phanindra208):** Published technical deep-dives on Shazam & Fourier Transforms (custom SVG animations + math), Post-Quantum Cryptography (13 rendered diagrams), Euler's Identity, Clean Architecture, and AI Agents with n8n/MCP/Docker.
- **LinkedIn Technical Content:** Regular posts on AI architecture patterns, MCP server design, Azure AI Foundry, and agentic engineering frameworks. 500+ professional connections.

ADDITIONAL INFORMATION

Nationality: Indian | **Based in:** Singapore (11+ years) | **Languages:** English, Telugu, Hindi
Interests: Chess, Mathematics, Open-Source Development, Technical Writing